ePaper Design-In for Smart Factories

Revolutionizing Industry with Wireless ePaper Technology

- Assembly Line
- AGV Robots
- Production Line
- Warehouses
- Co-Working Spaces

DeviceOn/ePaper

ADVANTECH

Enabling an Intelligent Planet

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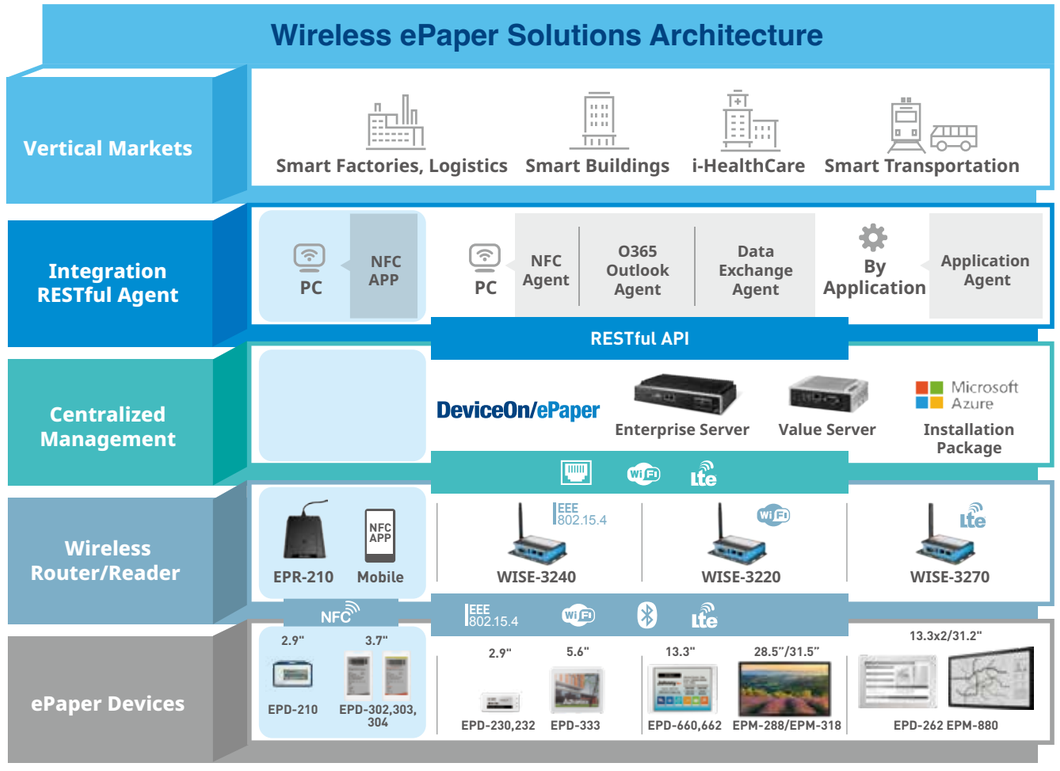
Revolutionizing Smart Factories with Advantech's ePaper Solutions

Drawing on years of expertise, Advantech offers a complete ePaper solution—featuring ultra-fast transmission, low power consumption, and seamless integration from cloud to edge devices. Our system supports centralized management, OTA upgrades, and roaming, delivering efficiency and sustainability for modern industries. Designed for easy deployment, Advantech's ePaper helps reduce human error, cut waste, and enhance operational precision, all while promoting eco-friendly practices aligned with ESG goals.



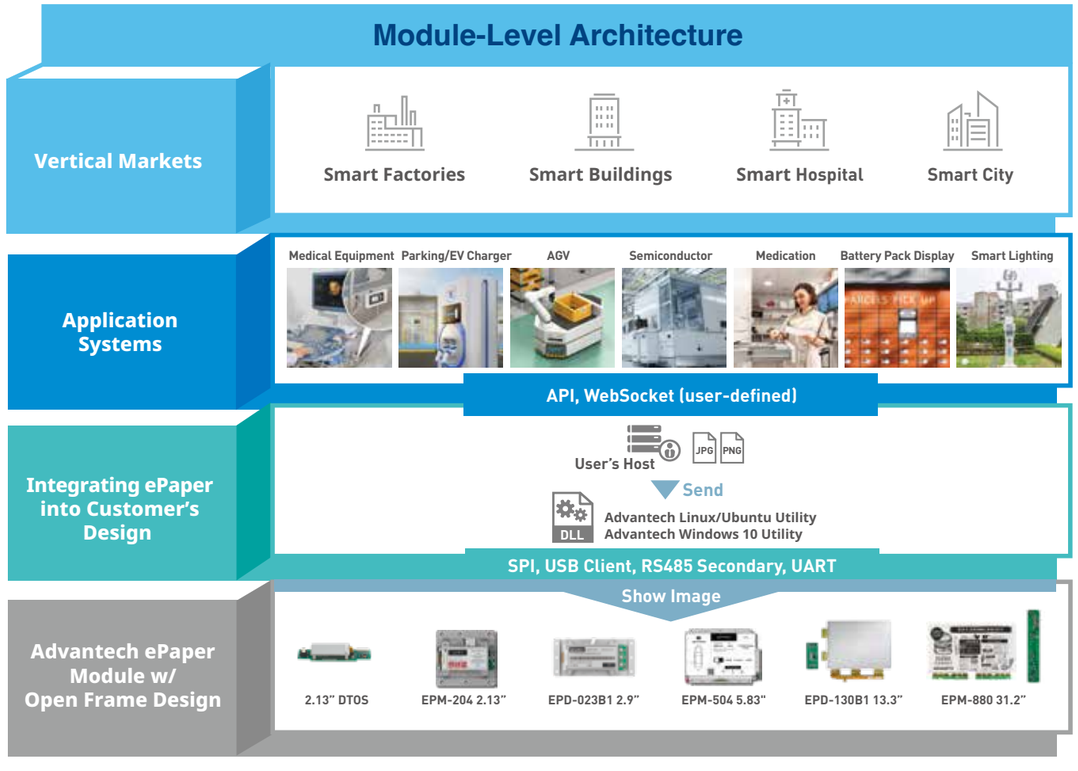
Eye friendly
Operates without a backlight, reducing strain on the eyes

Ultra-Low Power Consumption
Ensures prolonged usage with minimal energy

DeviceOn/ePaper SDK
Offers free sample code for easy integration

Module Architecture

This solution integrates with customer equipment via USB, RS-485, UART, or SPI interfaces. A DLL driver simplifies integration. ePaper displays range from 2.13" to 31.2" and suit applications like medical devices, semiconductor machines, AGVs, and EV chargers. By replacing paper, these solutions reduce carbon footprints and save time, offering a sustainable alternative.



Efficiency
Supports centralized management for streamlined operations

Sustainability
Provides ESG-friendly solutions to promote environmental responsibility

Flexibility
Enables OTA upgrades and roaming capabilities for seamless updates

Implementing ePaper in the manufacturing industry helps reduce costs and enhance efficiency

Background

Factory production run cards on trolleys are used to convey essential manufacturing information, including part numbers, quantities, production dates, process flow, and shipping dates. Typically, the paper labels are changed once the parts complete each process. Before moving to the next stage, the labels are updated and integrated into the real-time monitoring system to ensure process alignment.

System Requirements

The EPD-302 is a batteryless NFC solution designed for seamless integration. Advantech provides C# DLL sample code and an Android app SDK to simplify development. Using a mobile device or Advantech's NFC reader, the EPD-302 display can be quickly detected and updated. In a factory setting, barcodes or QR codes can transmit data the server, and an agent installed on production computers integrates the ePaper DLL object with the factory's manufacturing management system.

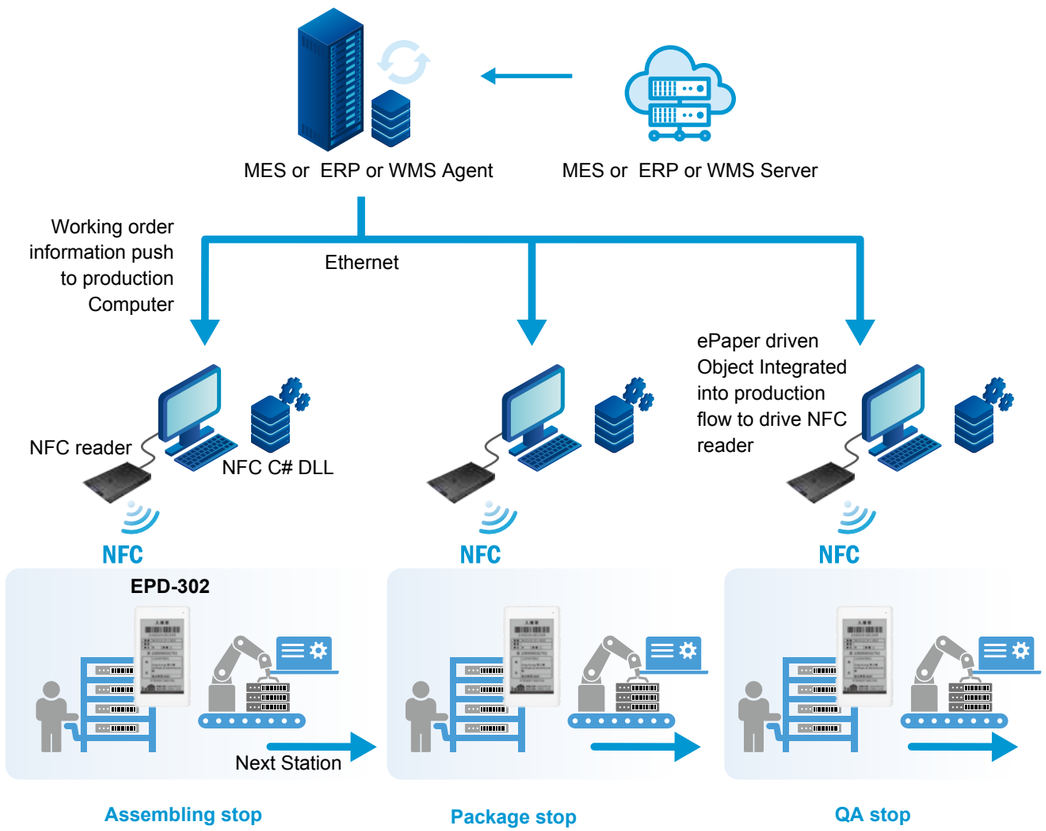
When the NFC reader detects the EPD-302, its display refreshes with the next process image in under 2 seconds, enabling it to seamlessly return to production at the next station. With its flexible software object, the EPD-302 can be updated anytime and anywhere using a mobile app.

System Implementation

The EPD-302/303 uses near field communication (NFC) technology to power its display enabling wireless and efficient updates via an NFC reader or mobile phone. A standout feature is its ability to retain images without power, making it ideal for factory logistics. This ultra-slim ePaper eliminates the need for batteries or cable installations, offering a dynamic and flexible solution for managing information in factory workflows.

For example, Advantech's NFC ePaper replaced traditional run cards that previously used around 30,000 pieces of paper daily. This change reduced CO2 emissions by 27,540kg, showcasing ePaper as an effective solution for lowering carbon output.

System Architecture



Benefits

- Battery-less product with fully reusable factory labels
- Dust- and pollution-resistant, ideal for cleanroom environments.
- Easy deployment and operation for detecting ePaper and refreshing images.
- Ultra-thin design with an IP68 rating, combined with over-the-air functionality, makes the ePaper hardware and software ideal for factory use.

Device List

1. EPD-302-N1002: 3.7" NFC B/W display ePaper device
2. EPD-303-N1001/EPD-303-N1002: 3.7" NFC B/W/R display ePaper device
3. EPD-304-N1002: 3.7" NFC B/W/R/Y display ePaper device
4. LEO-D30-RD1: NFC reader

ePaper enables automatic recording of production records

Background

A factory logistics box is a specialized container designed for efficient storage and transportation of goods in manufacturing or warehousing environments. By replacing traditional paper labels with ePaper, these boxes provide clear visualization of their contents. In addition to displaying material information, ePaper enhances inventory management and tracking capabilities.

System Requirements

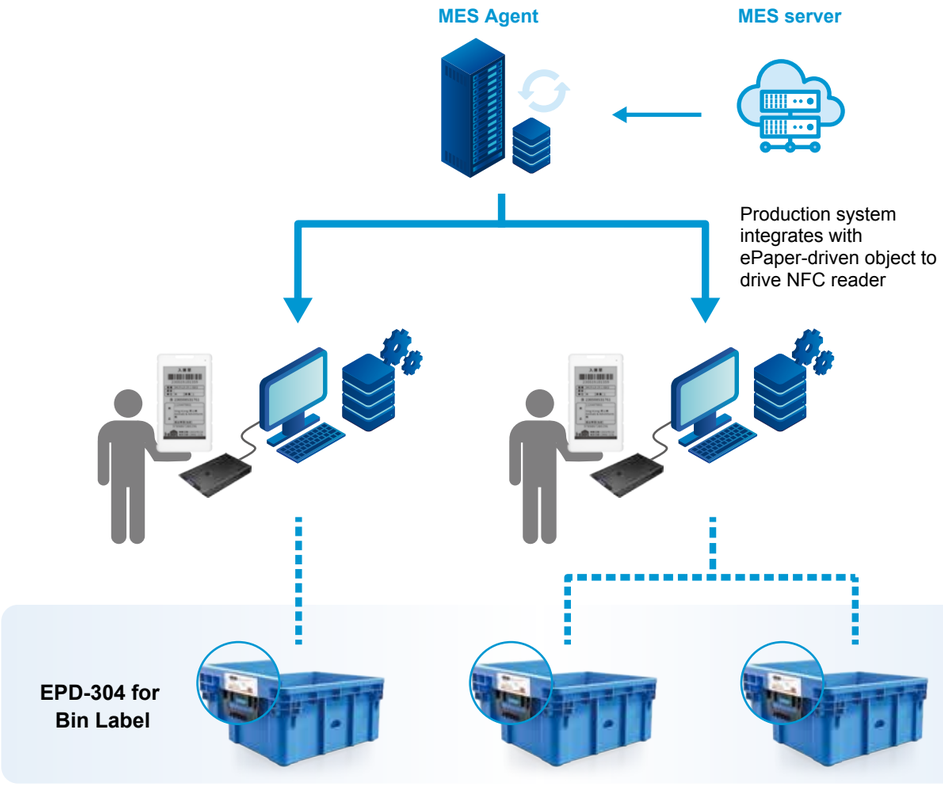
The EPD-304 is a battery-free NFC solution featuring a four-color display in black, white, red, and yellow. When detected nearby, it updates to display the next production process, thereby improving material and production management. Additionally, the EPD software integrates seamlessly with existing systems, becoming a natural part of factory operations. Through this integration, real-time production or shipping records are automatically uploaded to designated locations for on-site personnel to verify.

System Implementation

Traditional logistic labels often require frequent updates, which can be time-consuming and prone to errors, such as placing labels on the wrong boxes. Our system streamlines this process by providing accurate and timely information updates, improving overall efficiency. The EPD-303 also features 253 bytes of memory for storing production information, enabling seamless automation detection.

ePaper is particularly well-suited for cleanroom environments, as it helps reduce airborne particles. With rapid refresh capabilities and automatic data input, the system optimizes the entire production process, saving both time and costs.

System Architecture



Benefits

- 3.7" ePaper powered by NFC. No battery is required.
- Ultra light and thin for easy installation and mobility.
- OTA ready with sample code and agent.
- Fast response with EPD-302 black and white display; high contrast and high reflectance with EPD-303/ EPD-304 3 or 4-color display
- IP68 rated, suitable for industrial applications.

Device List

1. EPD-302-N1002: 3.7" NFC B/W display ePaper device
2. EPD-303-N1001/EPD-303-N1002: 3.7" NFC B/W/R display ePaper device
3. EPD-304-N1002: 3.7" NFC B/W/R/Y display ePaper device
4. LEO-D30-RD1: NFC reader

ePaper for controlling access in restricted areas, functioning as a smart ID badge

Background

Corporate ID cards for employees and visitors play a vital role in validating an individual's identity and role within a company. However, frequently updating paper ID badges—daily for visitors and periodically for employees—can lead to significant waste paper and hinder ESG initiatives.

Switching to electronic visitor ID badges enhances the corporate image while improving the efficiency of access management systems. In restricted areas, such as high-risk environments or kindergartens, high-resolution photos on electronic badges are essential for accurate visitor identity verification.

System Requirements

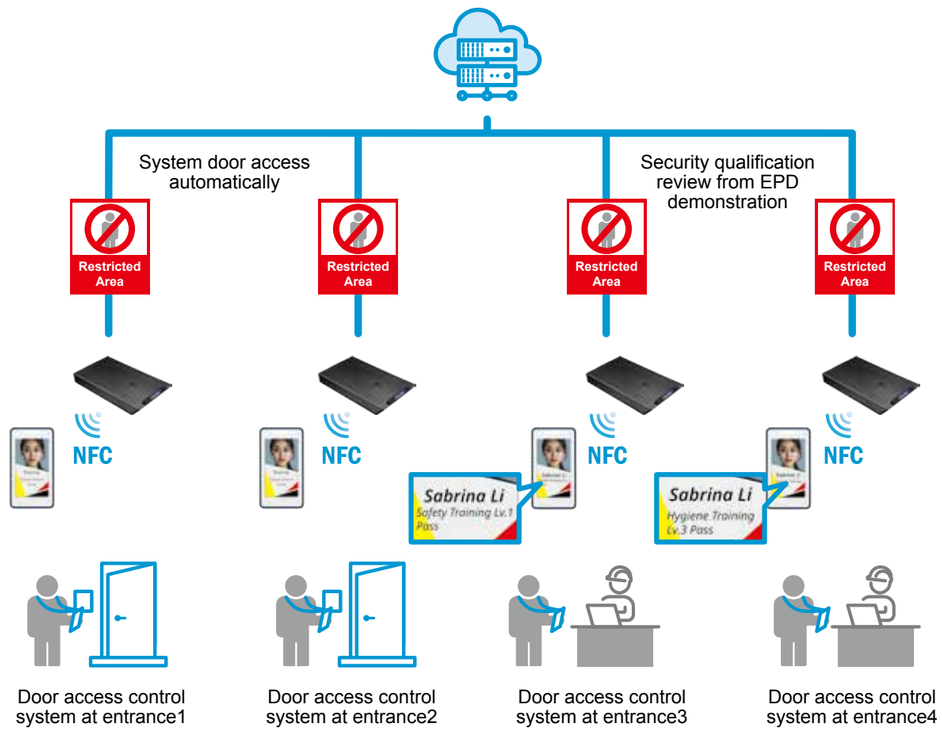
The EPD-304 is an effective tool for enhancing restricted area management through dynamic visualization. Employees and vendor IDs can be updated in real time based on based on their entry qualifications, allowing security personnel to monitor and control access with ease using the displayed images and security keys.

Advantech's NFC ePaper solution includes sample code for driving ePaper and a mobile app SDK, enabling seamless integration with customers' content management systems (CMS). Employee and visitor information can be automatically populated into designated forms ahead of time, simplifying access management for the general affairs department.

System Implementation

Employee and visitor ID cards are crucial for controlling access in companies, schools, hospitals, and similar organizations. By using the EPD-303/EPD-304 ePaper electronic ID badge solution, the time spent printing ID cards and verifying identities is greatly reduced. Smart buildings can install readers at restricted entrances to detect ePaper badges and track access. If invalid MAC addresses or numbers are detected, the system will trigger alarms, strengthening security management.

System Architecture



Benefits

- Ultra lightweight to carry an electronic ID card.
- Clear and simple to authenticate identity and grant permission.
- High resolution with image and IP68 rated.
- EPD can be updated dynamically according to the user.

Device List

1. EPD-302-N1002: 3.7" NFC B/W display ePaper device
2. EPD-303-N1001/EPD-303-N1002: 3.7" NFC B/W/R display ePaper device
3. EPD-304-N1002: 3.7" NFC B/W/R/Y display ePaper device
4. LEO-D30-RD1: NFC reader

A real-time production process flow closely integrated with the ePaper on trolley

Background

Trolleys are commonly used in production to transport components and products to the next station. The process relies on displaying manufacturing orders on ePaper, allowing operators at each station to understand the status and perform their tasks efficiently. After each process, the ePaper display is refreshed or updated with clear information about part numbers, quantities, shipping dates, and more. This ensures that all production data remains aligned and up-to-date.

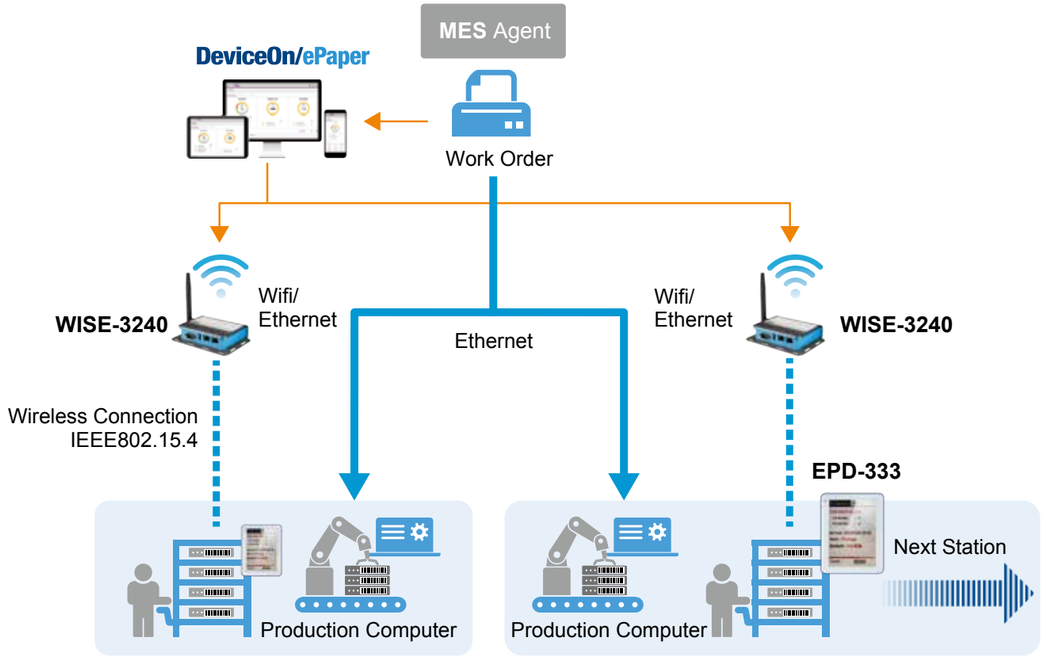
System Requirements

Advantech provides both the physical hardware and an Azure installation package to help customers implement DeviceOn/ePaper with our ePaper device management system. End users can easily monitor device status, including signal strength and battery levels, and set up scheduled reports to track assigned tasks. The EPD-333 operates on a 2.4GHz network protocol and features ultra-low power consumption. Roaming is the key feature of the EPD-333, enabling ePaper to function seamlessly across large-scale applications. The device automatically searches for the nearest router, allowing it to connect and operate without delays.

System Implementation

Advantech's industrial factory solution offers easy deployment and integration. We provide an API that simplifies the integration with customers' WMS or ERP systems. The DeviceOn/ePaper API includes comprehensive data, functionality, and analytics, making Advantech's ePaper a complete and effective solution for larger factories. This solution helps reduce human error in complex production processes and saves time spent preparing run card labels or updating content. Additionally, it offers significant ESG benefits for both employers and governments.

System Architecture



Benefits

- 5.6" colorful ePaper for great visualization.
- Ultra-low power consumption and system sustainable for many years.
- Multiple I/O control with one button & two colors of LED.
- Solution with WISE-3240 network coordinator & DeviceOn/ePaper CMS.

Device List

1. EPD-333-001/EPD-333-011: 5.6" colorful ePaper display.
2. WISE-3240IOS-41A1T for Taiwan/WISE-3240IOS-41A1E for Europe/WISE-3240IOS-41A1N for America/WISE-3240IOS-41A1C for China: Wireless EPD 2.4G Wi-Fi Network IoT Router.
3. ARK-1123H-EP2A2 or ARK-2250L-EP1A2: Ubuntu 18.4/128G SSD/8G RAM and built-in ePaper manager software with 100/500 device licenses.

Quick and effective updates to production SOPs

Background

Factory production SOPs are typically presented in formats such as written documents, flowcharts, or checklists and are commonly displayed at each workstation. Traditionally, these SOPs are printed and manually updated whenever changes occur on the production line, a time-consuming and cumbersome process, especially for similar workflows.

ePaper provides a more efficient solution with 180-degree viewing angles and an image generator that can automatically update all templates with item-specific data. Without the need for backlighting or concerns about overheating, ePaper requires only a one-time deployment, simplifying content updates and enhancing overall efficiency.

System Requirements

The EPD-660/EPD-662 requires Wi-Fi to connect with to the ePaper management server, utilizing standard Wi-Fi for broad connectivity in factories, hospitals, and schools. Advantech provides design-in modules to support diverse customer applications, along with an industrial-grade system for these devices.

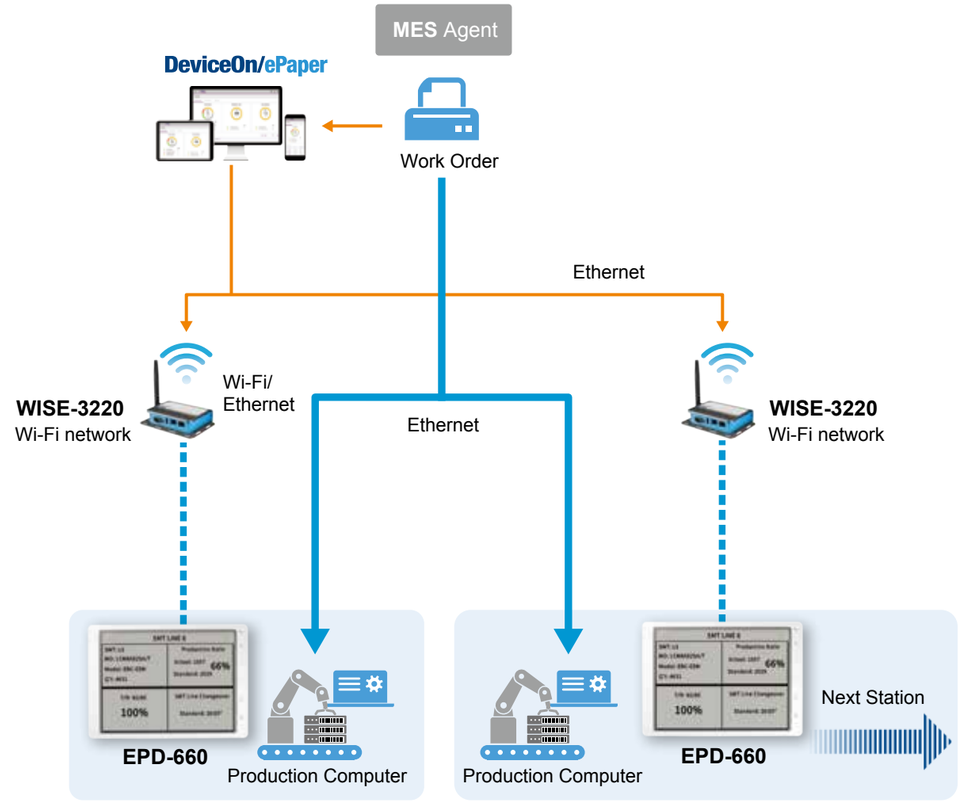
Using our BLE app, users can easily configure EPD access information, enabling seamless connection to standard Wi-Fi networks. Advantech delivers a comprehensive DeviceOn/ePaper solution, spanning edge to cloud integration. Additionally, a simple dispatcher can control up to 10 units without the need for complex processes. Hardware deployment is straightforward, and multiple software installation options make setup quick and efficient.

System Implementation

Through implementation of ePaper, time can deploying SOPs. Through API integration, the WMS or ERP system directly inputs production data. Industrial-grade mechanical ePaper is capable of operating in demanding factory environments, with an operating temperature range from 0 to 50°C (32 to 122°F). It has been rigorously tested for durability, including drop tests, vibration resistance, IP rating, and alcohol resistance.

The open frame design also provides flexibility for end users to integrate it into their applications, such as mounting it within a cabinet.

System Architecture



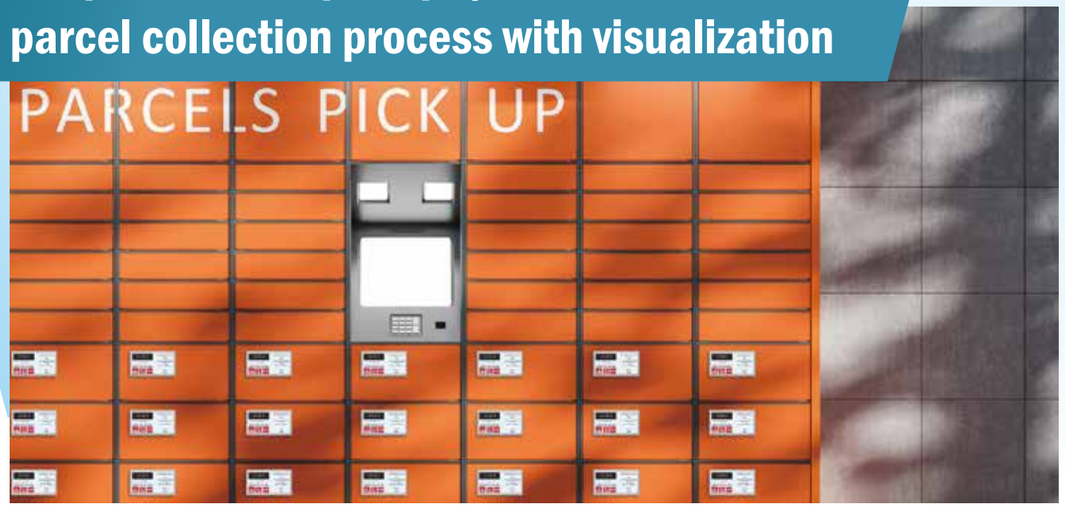
Benefits

- SOP information remains on the screen, even if power is lost.
- Eye-friendly: no blue light, with wide viewing angles.
- DeviceOn/ePaper support centralized management to deliver a consistent flow of data to production lines.
- Solution works with WISE-3240 network coordinator & DeviceOn/ePaper CMS.

Device List

1. EPD-662-103/EPD-662-W1001: 13.3" spectra 6 WiFi w/o battery w/o button
2. WISE-3220IOS-21A1T for Taiwan/WISE-3220IOS-21A1E for Europe/WWISE-3220IOS-21A1N for America/WISE-3220IOS-21A1C for China: Wi-Fi AP and configuration router.
3. ARK-1123H-EP2A2 or ARK-2250L-EP1A2: Ubuntu 18.4/128G SSD/8G RAM and built-in ePaper manager software with 100/500 device licenses.

ePaper solution promptly streamlines the parcel collection process with visualization



Background

As e-commerce and mobile commerce continue to grow, improving the efficiency of “last mile delivery” has become a critical factor for the logistics industry’s development. Additionally, challenges in manpower scheduling and allocation have led to worker shortages, further complicating logistics and distribution operations. To address these issues and enhance last mile logistics efficiency, the introduction of smart pick-up lockers is helping to alleviate manpower shortages and reduce transportation costs, steering the logistics industry in a new direction.

System Requirements

Currently, smart cabinets use a mobile APP to scan the ePaper QR code on the cabinet, replacing the traditional human-machine interface. This approach reduces the cost of the human-machine interface for smart cabinet providers. For users, each cabinet is equipped with a dedicated EPM-204 display screen that shows the recipient’s status, the contents, and the unlocking QR code. The recipient can easily operate the cabinet by scanning the QR code via the mobile APP.

For maintainers, the EPM-204 screen on each cabinet displays the status and contents, making it simple to maintain and update the cabinet without the need to open each one individually. The ePaper screen can be updated via Bluetooth, or it can be controlled using RS-485 or USB connections to a central computer in the cabinet.

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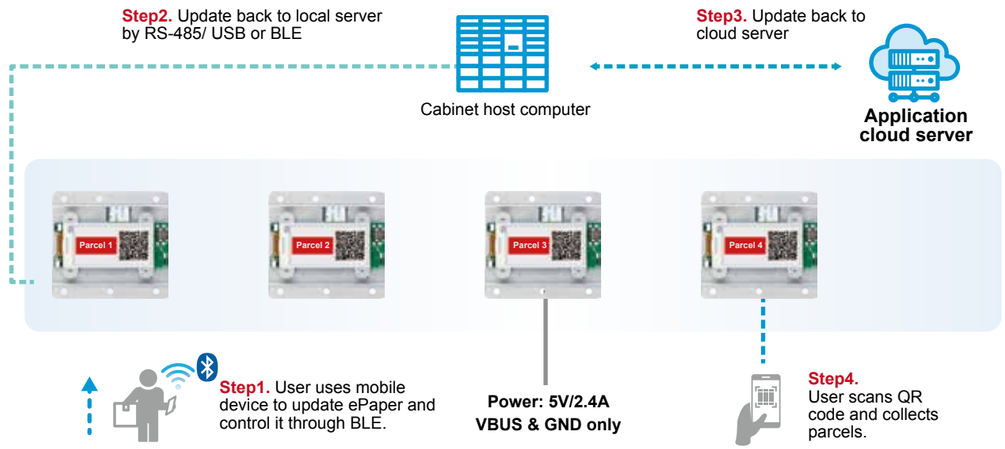
System Implementation

E-paper devices are ideal for visualization and data transmission, especially with the Internet of Things (IoT). The maintainer can determine whether to open the cabinet to place new goods and lock it based on the screen. To access it, the user simply scans the QR code to unlock it. The person picking up the items follows the notification instructions to locate the cabinet containing the goods, then scans the QR code to open it and complete the pickup.

System Architecture



Benefits

- Saves labor without requiring additional registration processes.
- Quick and convenient: Eliminates waiting time, allowing for self-service pick-up in seconds.
- Safe, reliable, and privacy-conscious: Pickup is verified via the app, with one cabinet and one ePaper display to protect personal information and provide a complete delivery and pickup record, ensuring package security.
- Reduced physical contact to safeguard users’ health: Minimizes face-to-face interactions during package delivering and pickup.
- Reduces carbon emissions and physical labor: No need to print receipt paper; items can be picked up or placed according to the information displayed on the cabinet.

Device List

1. EPM-204-B1B01 : 2.13" ePaper wireless module with BLE 5.4.
2. EPM-204-C1D01 : 2.13" module with USB / UART interface.
3. EPM-204-C1D02 : 2.13" open frame with USB / UART and RS485 on I/O board.

Semiconductor Sorting Machine Visualization

Background

Semiconductor sorting machines need to display information about materials currently in production. ePaper offers a sustainable solution by retaining and displaying the latest information even without power. Replacing traditional paper labels with ePaper enhances efficiency, clarity, and cleanliness. Additionally, ePaper is reusable, saving time and reducing the carbon footprint.

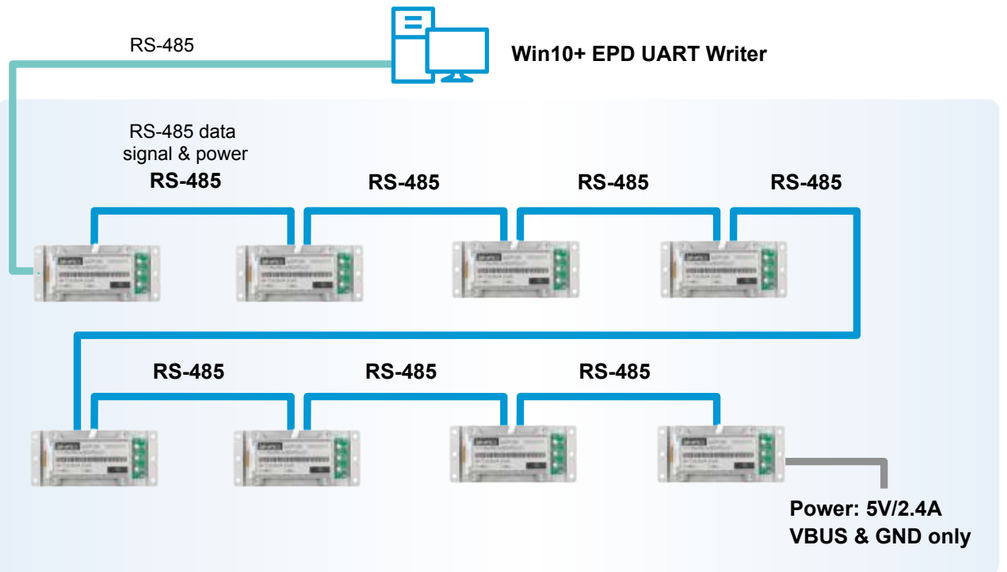
System Requirements

Hardware limitations are a thing of the past. Our innovative design-in approach allows end users to effortlessly integrate ePaper display panels into their systems, thanks to highly customizable open-frame designs. This flexibility in hardware customization is complemented by multiple software interfaces, including UART, RS-485, SPI, and USB. With the simple ePaper driver, users no longer need a complex system to operate the display.

System Implementation

Integrating ePaper display modules into sorting machines streamlines processes and reduces power consumption. The ePaper panel retains the last updated information even when powered off, allowing operators to verify materials during production, minimizing human errors. End users can seamlessly integrate ePaper driver sample code into their production and stock systems, simplifying the input of parts information. A centralized management system for pushing images further enhances efficiency by saving time and preventing incorrect label placement.

System Architecture



Benefits

- Multi-interface RS-485, UART and USB.
- Open frame design with flexible embedded ePaper display module.
- Fast data transmission and panel refresh.
- Ready SW package including driver and sample code.
- Bi-stable with wide viewing angles and image retention without power.

Device List

1. EPD-023B1AG-NTC01: 2.9" ePaper display module with UART.

Retrieving all data before the equipment powers off

Background

Enhancing the visitor experience in theaters and stadiums requires reducing the time spent searching for seats or locations. Traditional paper signage fades over time, and seat plates must be updated for every show or game, creating inefficiencies. With labor shortages, minimizing staff maintenance efforts is increasingly valuable.

ePaper offers a reusable solution, retaining images once updated and eliminating the need to print individual paper copies. Its backlight-free design won't disrupt the audience's experience during performances. Deploying ePaper streamlines seat management, reduces maintenance, and enhances overall efficiency.

System Requirements

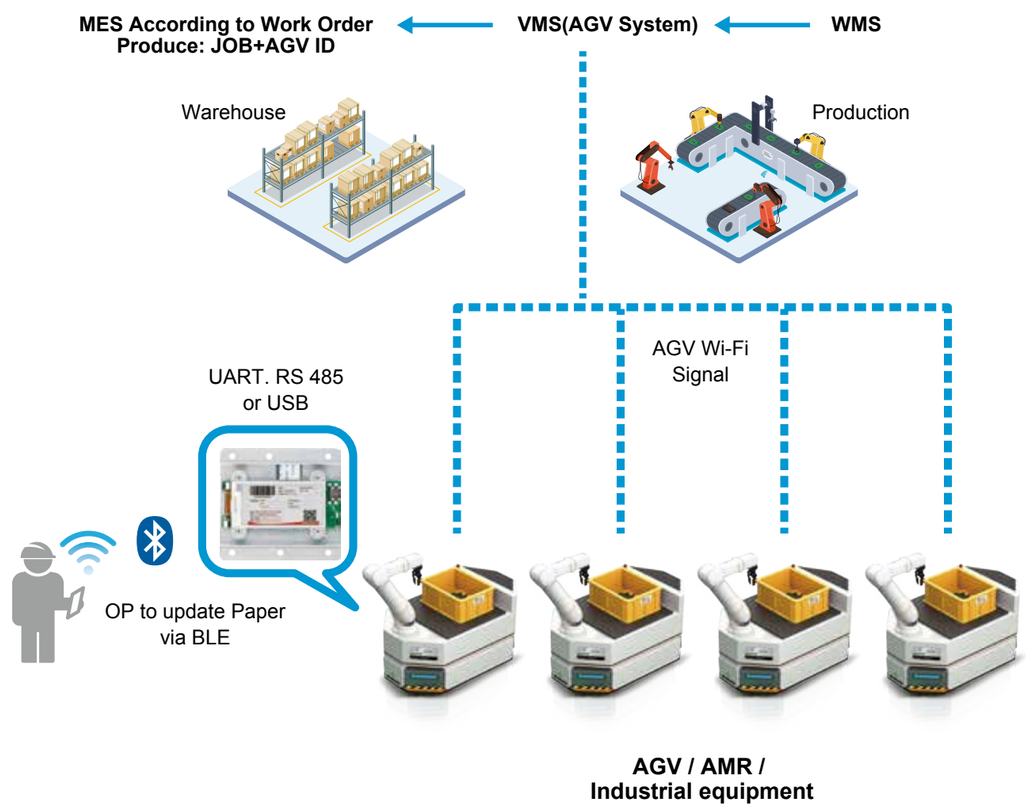
The EPM-204 supports display updates through multiple interfaces, including UART, RS-485, and USB. It also enables wireless image updates via Bluetooth, allowing changes to be made through an app. With its design-in ePaper display module, users can easily mount or attach the device to their equipment, ensuring compatibility with a wide range of hardware configurations.

System Implementation

ePaper displays information without requiring a battery or wired power source, allow the display to remain visible even when the machine is powered off. Since some production processes take extended periods and do not require frequent updates, ePaper is an ideal solution for showing production status and remaining active until tasks are completed.

Integrating ePaper into equipment lowers overall system power consumption and enhances efficiency without power concerns. Advantech offers RS-485, UART, and USB drivers for seamless software integration across various equipment. This setup supports Human-Robot Collaboration (HRC), enabling operators to view product details on the ePaper display and provide components to robotic arms, AGVs, and AMRs. This integration boosts production efficiency while minimizing human errors.

System Architecture



Benefits

- Supports USB / UART / RS485 wired communication.
- Supports Over-the-Air (OTA) upgrades .
- Bi-stable with wide viewing angles and Image retention without power.
- Ready SW package including driver and sample code.

Device List

1. EPM-204-C1D01 2.13" ePaper display module with open frame design and USB/UART interface.
2. EPM-204-C1D02 2.13" ePaper display module with open frame design and RS-485 interface.

EPD Device




Model Name		EPD-210	EPD-302	EPD-303	EPD-304
Display	Panel Size	2.9"	3.7"		
	Resolution	296 x 128 pixels	240 x 416 pixels		
	Colors	Black, White	Black, White	Black, White, Red	Black, White, Red, Yellow
Button/Indicator		NA	LED x 1 (3 colors)	LED x 1 (3 colors)	LED x 1 (3 colors)
Dimension		101 x 58 x 4 mm w/o fastener	62.5 x 110.9 x 5.2 mm		
Network		NFC	NFC		
Power		NFC Power Harvesting	NFC Power Harvesting		
Operating Temperatures		0 ~ 40 °C	0 ~ 40 °C		
Certification		Not Necessary	Not Necessary		
Ordering Information		EPD-210-001	EPD-302-N1002	EPD-303-N1002	EPD-304-N1002
Solution Package	Router / reader	NFC reader (LEO-D30-RD1)	NFC reader (LEO-D30-RD1)		
SW Package	Android APP	YES, standard & sample code	YES, standard & sample code	YES, standard & sample code	YES, standard & sample code
	integrated sample code	NFC Agent (DLL sample code)	NFC Agent (DLL sample code)	NFC Agent (DLL sample code)	NFC Agent (DLL sample code)
	Support DeviceOn/ ePaper API, simple dispatcher	YES, template only	YES, template only		




Model Name		EPD-230	EPD-232	EPD-333	EPD-333-Z
Display	Panel Size	2.9"		5.6"	5.83"
	Resolution	296 x 128 pixels		600 × 448 pixels	480 x 648 pixels
	Colors	Black, White	Black, White,Red	Colored	Black, White, Red, Yellow
Button/Indicator		LED x 3 (1 color), Button x 3		LED x 1(2 colors), Button x 1	
Dimension		100 x 47 x 17.9 mm		118.3 x 140 x 14 mm	
Network		Zigbee 2.4GHz		Zigbee 2.4GHz	
Power		Battery CR2450 x 4		Battery CR2450 x 4	
Operating Temperatures		0 ~ 50 °C	0 ~ 40 °C	15 ~ 35 °C	0 ~ 40 °C
Certification		CE/FCC/NCC/UL/CB/Telec		CE/FCC/NCC/UL/CB	CE/FCC/NCC/UL/CB
Ordering Information		EPD-230-011	EPD-232-011	EPD-333-011	EPD-333-Z1001
Solution Package	Router / reader	Zigbee Router (Zigbee Router (MustBe WISE-3240)		Zigbee Router (MustBe WISE-3240)	
SW Package	Android APP	NA	NA	NA	NA
	integrated sample code	NA	NA	NA	NA
	Support DeviceOn/ ePaper API, simple dispatcher	only DeviceOn/ePaper API		only DeviceOn/ePaper API	

EPD Device




Model Name		EPD-660/662	EPD-662-W	EPD-258	EPD-262
Display	Panel Size	13.3"		25.3"	13.3" x 2
	Resolution	1600 x 1200 pixels		3200 x 1800 pixels	1600 x 1200 pixels x 2
	Colors	Black, White Black, White, Red	Colored	Colored	Black, White
Button/Indicator		LED x 1 (2 colors), Button x 5		NA	NA
Dimension		328 x 235 x 23 mm		602.4 x 357.4 x 37.5 mm	682.8 x 334.8 x 69 mm
Network		WiFi 2.4GHz		WiFi 2.4GHz	4G/LTE, USB 2.0
Power		Battery 8233mAh/5V & DC5V/2A		DC20V/2.25A	DC12V/3A
Operating Temperatures		0 ~ 50 °C/0 ~ 40 °C	0 ~ 50 °C	15 ~ 35 °C	-15 ~ 65°C
Certification		CE/FCC/NCC/UL/CB/Telec		NCC/FCC/CE/VCCI	By project
Ordering Information		EPD-660-002(w/ battery) EPD-660-102(w/o battery) EPD-662-003(w/ battery) EPD-662-103(w/o battery)	EPD-662-W1001	EPD-258-W1D00	EPD-262-L1D01 EPD-262-C1D01
Solution Package	Router / reader	WiFi Router (not MustBe WISE-3220)		WiFi Router (Not MustBe WISE-3220)	NA
SW Package	Android APP	BLE configeration APP	BLE configeration APP	NA	NA
	integrated sample code	NA	NA	NA	NA
	Support DeviceOn/ ePaper API, simple dispatcher	DeviceOn/ePaper API & Dispatcher		DeviceOn/ePaper API & Dispatcher	DeviceOn/ ePaper

Memo

EPD Module / open frame

Model Name		EPM-204	EPD-023B1	EPD-053R	EPM-702	EPD-130	EPM-880	EPM-288
Display	Panel Size	2.13"	2.9"	5.83"	7"	13.3"	31.2"	28.6"
	Resolution	122 x 250 pixels	296 x 128 pixels	480 x 648 pixels	480 x 800 pixels	1600 x 1200 pixels	2560 x 1440 pixels	3060 × 2160 pixels
	Colors	Black, White	Black, White	Black, White, Red, Yellow	Black, White	Black, White for 16 Gray Level	Black, White for 16 Gray Level	Colored
Storage		SPI Flash 32MB	SPI Flash: 256 KB	SPI Flash: 256 KB	SPI Flash 32MB	NA	NA	SPI flash: 16MB Boot code & 128MB OpenWRT
Interface	USB-C connector	1 (USB/UART & Power)	2 (RS-485 & Power)	2 (RS-485 & Power)	1 (USB/ I2C & Power) 1(RS485/UART)	0	0	0
	USB-A connector	0	0	0	0	1 (USB header)	1	1
	Interactive	LED x 1 (7 colors), Button x 1	LED x 3 (1 color), Button x 3	LED x 1(2 colors), Button x 1	LED x 1(2 colors), Button x 2	0	0	0
	Reset Button	1	0	0	1	0	1	0
	GPIO	0	6	6	0	0	8	0
Dimension	ePaper Display Panel	29.2 × 59.2 × 1.0 mm	79.0 × 36.7 × 1.17 mm	125.4 × 99.5 × 0.9 mm	111.2 × 170.2 × 1.2 mm	285.80 x 213.65 x 0.78 mm	697.2 × 402.8 × 0.805 mm	424.00 (H) x 652.55 (V) x 5.2 (D Max.) mm
	PCBA	**Main Board:** 73.5×29.2×5.9 mm	**Main Board:** 89x36.8x5.86 mm **IO Board:** 43 x 36 x 5 mm	**Main Board:** 89x36.8x5.86 mm **IO Board:** 43x36x5 mm	**Main Board:** 73.5×29.2×5.9 mm **Panel Board:** 48×22×4.75 mm **IO Board:** 43x36x5 mm	**Main Board:** 120 x 36 mm	400x65x14.6 mm	NA
Connectivity								Wi-Fi
Network								WAN/LAN
Power	Battery (Optional)	CR2032 x 2	CR2450 x 4	CR2450 x 4	CR2450 x 6	NA	NA	NA
	DC-in	USB-C, 5V/0.5A	USB-C, 5V/0.5A	USB-C, 5V/0.5A	USB-C, 5V/0.2A	USB-C, 5V/3A	DC, 12V/3A	DC 12V/3A
Operating Temperatures		0 ~ 40 °C	0 ~ 50 °C	0 ~ 40 °C	-15 ~ 65 °C	-15 ~ 65 °C	-15 ~ 65 °C	0 ~ 50 °C
Certification		FCC/NCC/CE	FCC/NCC/CE/ Telec	FCC/NCC/CE/ Telec	FCC/NCC/CE	FCC/CE	FCC/NCC/CE/ Telec	FCC/NCC
Ordering Information		EPM-204-C1D02	EPD-023B1AG-NTC01	EPD-053R2AG-NTC02	EPM-702-C1D02	EPD-130B1AG-NSD02	EPM-880-101	EPM-288-W1D001 EPM-288-C1D001
Solution Package	Router / reader	NA	NA	NA	NA	NA	WISE-3270 (MustBe WISE-3270)	NA
SW Package	mobile APP	BLE APP	NA	NA	BLE APP	NA	NA	NA
	integrated sample code	BLE API & sample code	RS-485 driver & sample code	RS-485 driver & sample code	BLE API & sample code	driver & sample code	driver & sample code	driver & sample code
	API Support DeviceOn/ ePaper, simple dispatcher	NA	NA	NA	NA	NA	YES	YES

Wireless Router/Reader

EPD router & reader	WISE-3220	WISE-3240	WISE-3270	EPR-210
Network	WiFi 2.4GHz	Zigbee 2.4GHz	4G/LTE	NFC Reader
Available Connections	Max. 100 pcs EPD-660/ EPD-662	Max. 400 pcs EPD-230/ EPD-232/EPD-333	1 pc EPD-262	1 pc EPD-210/EPD-303
Power	DC12V/2A	DC12V/2A	DC12V/2A	Micro USB 5V/0.5A
Operating Temperature	-20 ~ 60 °C	-20 ~ 60 °C	-20 ~ 60 °C	0 ~ 70 °C
Storage Temperature	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C
Dimensions	143 x 101 x 30 mm	143 x 101 x 30 mm	143 x 101 x 30 mm	121 x 74.2 x 14.5 mm
Certification	CE/FCC/NCC	CE/FCC/NCC	CE/FCC/NCC	NA
Ordering Information	WISE-3220IOS-21A1T for Taiwan	WISE-3240IOS-41A1T for Taiwan	WISE-3270IOS-71A2T for Taiwan	LEO-D30-RD1

Centralized Management

Server	ARK-2250 A2	ARK-1123 A2	Ubuntu 20.04/22.04 Server	Windows 10 server	Windows 10 server
EPD SW / CMS	DeviceOn/ePaper	DeviceOn/ePaper	DeviceOn/ePaper Installation Package	Dispatcher	NFC agent
Description	Intel® i7-6600U, 16GRAM, 1 TB HDD, ADP	Intel® Celeron J1900 SoC, 8GRAM, 128GB SSD, ADP			
Software	Ubuntu 18.4 with DeviceOn/ePaper	Ubuntu 18.4 with DeviceOn/ePaper	Compatible with Ubuntu 20.04/22.04 Server for installation	Compatible with Windows 10 Server for installation	Compatible with Windows 10 Server for installation
Available Connections	10,000 pcs (EPD-203/EPD-230/EPD-232/EPD-333/EPD-702 500pcs EPD-707/EPD-660/EPD-662/EPD-258/ EPD-262)	100 pcs (EPD-203/230/EPD-232/ EPD-333/EPD-702 20pcs EPD-707/EPD-660/ EPD-662/EPD-258/EPD-262)			
Power	DC12V/5A	DC12V/5A			
Operating Temperature	0 ~ 45 °C/32 ~ 113 °F	0 ~ 40 °C/32 ~ 104 °F			
Storage Temperature	-40 ~ 85 °C	-40 ~ 85 °C			
Dimensions	260 x 140.2 x 54 mm	133.8 x 94.2 x 43.11 mm			
Certification	CE/FCC Class B, CCC, BSMI, UL	CE/FCC Class B, CCC, BSMI, UL			
Ordering Information	ARK-2250L-EP1A2 with 500 device licenses	ARK-1123H-EP2A2 with 100 device licenses (ARK-1221L Ubuntu20.04 will be available by Q4 2025)	32WSWPEPD500A0 (500pcs license)	By project	By project

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